

Work Order ID **76479**

76479

Page 1

Wednesday, November 23, 2011 11:42:44 A

Item ID: D119-696-013

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Item Name: Dual Cargo Mirror Installation

Stop ***NS2***

Start Date: 11/15/2011 Start Qty: 8.00

8

Cust Item ID:

Required Date: 11/25/2011 Req'd Qty: 8.00

8

Customer:

Reference: ECN 11-648 **- Rework**

Approvals: Process Plan: *mif*

Date: *11-11-23* Tooling:

Date:

Run Start ***NR1***

QC:

Date: SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
DSI9578	A								
IIN-D119-696	A								

150

0.00

150

Packaging

Memc

0.00

SP 12/02/08

Packaging

PULL FROM STOCK D119-696-013 X 8
B 57030 X 1
B 61888 X 1
B 67233 X 6

Work Order ID 76479***76479***

Page 2

Wednesday, November 23, 2011 11:42:44 A

Item ID: D119-696-013

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Dual Cargo Mirror Installation

Start Date: 11/15/2011 Start Qty: 8.00

8

Cust Item ID:

Required Date: 11/25/2011 Req'd Qty: 8.00

8

Customer:

Reference: ECN 11-648

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

160

0.00

160

Small Fab

Memo

0.00

Small Fab

REMOVE AND DISCARD EXISTING D119-696-043 (D3074-3) ARM

REMOVE PER KIT AND PUT ASIDE :

-D2011-101 MIRRORS

-D2054 BUSHINGS

-D2055 CLAMPS

-D2056 BELLCRANK

-D3072-2 BRACKET

-D3072-1 BRACKET

DISCARD ALL HARWARE AND REPLACE WITH NEW HARDWARE

1- punch one side

2- slide parts in tube

3- punch other side

4- bend as per dwg

5- drill holes as per dwg

6- deburr and polish

INSTALL D4450-043 ARM ASSY PER DRAWING USING ORIGINAL
PARTS FROM KITS

ASSEMBLE WITH NEW HARDWARE

(8) ^S FF 12-02-08

(8) ^S FF 12-02-08

(8) ^S FF 12-02-08

Work Order ID 76479***76479***

Page 3

Wednesday, November 23, 2011 11:42:44 A

Item ID: D119-696-013

Accept

N900040100Setup Start ***NS1***

Revision ID:

Item Name: Dual Cargo Mirror Installation

Stop ***NS2***

Start Date: 11/15/2011 Start Qty: 8.00

8

Cust Item ID:

Required Date: 11/25/2011 Req'd Qty: 8.00

8

Customer:

Reference: ECN 11-648

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

170

QC5- Inspect part completeness to step on W/O

0.00

170

QC

Memo

0.00

Quality Control

Sizeloe

(X)

180

0.00

180

Packaging

Memo

0.00

Packaging

ID AND STOCK UNDER NEW BATCH NUMBER

DISCARD OLD PAPERWORK AND REPLACE WITH NEW

\$441

RUE

CHG006

12/2/10 S/S

H for MJS 12-2-9 (8)

190

QC4- 100% Inspect kits for completeness

0.00

190

QC

Memo

0.00

Quality Control

Sizeloe

Work Order ID 76479***76479***

Page 4

Wednesday, November 23, 2011 11:42:44 A

Item ID: D119-696-013

Accept

N900040100Setup Start ***NS1***

Revision ID:

Item Name: Dual Cargo Mirror Installation

Stop ***NS2***

Start Date: 11/15/2011 Start Qty: 8.00

8

Cust Item ID:

Required Date: 11/25/2011 Req'd Qty: 8.00

8

Customer:

Reference: ECN 11-648

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

200

QC21- Final Inspection - Work Order Release

0.00

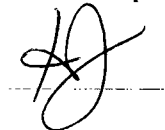
200

QC

Memo

0.00

Quality Control

12/2/13 

11/23/13

Picklist Print

Wednesday, November 23, 2011 11:42:43

Page 1

Work Order ID: 76479

Parent Item: D119-696-013

Parent Item Name: Dual Cargo Mirror Installation

Start Date: 11/15/2011

Required Date: 11/25/2011

Start Qty: 8.00

Required Qty: 8.00

Comments: IPP Rev:A 08-02-19 New issue DD verified by: LL IPP REV:B 11.01.19 AS PER
CHG005 DD VERF:EC IPP REV:C 11.11.14 AS PER CHG006 DD VERF:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
AN960JD10 Washer	NAS1149D03631	Purchased	No	M120142			Each	0.0000		48 48	FF	12-02-08	
D3014-1 Locknut		Manufactured	No				Each	64.0000		16	FF	12-02-08	

Location	Loc Qty	Loc Code
ST030	64	
18605	64	
M304TR0.500W.049 304 RD Tube .500 x .049W		
Purchased	No	f
		287.2801

31.2
FF 12-02-08

Location	Loc Qty	Loc Code
MAT017	287.280058	
111814	2.23	
115010	145.421058	
117598	49.87	
119087	89.759	
MS21042L3 Nut		
Purchased	No	Each
		8,252.0000

31.8
24
FF 12-02-08

Location	Loc Qty	Loc Code
ST300	213	
117441	16	
117885	35	
118451	5	
118927	157	
ST516	5994	
119017	5994	
ST518	2045	
119075	2045	

24

Picklist Print

Wednesday, November 23, 2011 11:42:44

Page 2

Work Order ID: 76479

Parent Item: D119-696-013

Parent Item Name: Dual Cargo Mirror Installation

Start Date: 11/15/2011

Required Date: 11/25/2011

Start Qty: 8.00

Required Qty: 8.00

MS27039-1-18

Purchased

No

Each

66.0000

Screw

FF²⁴ 12-02-08

Location

Loc Qty

Loc Code

ST291

66

115589

66

24

DART SERVICE INSTRUCTION

TO AMEND INSTALLATION INSTRUCTIONS IIN-D119-696 REV. A AND
INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA-D119-696 REV. 0

REF FAA STC: SR01043SE

REF TC LETTERS OF ACCEPTANCE: C-11-0119/-0120/-0121

REF EASA STC: EASA.IM.R.S.01551

PURPOSE

This service instruction details the D119-696-011/-013 Cargo Mirror Installations at CHG 006 which have been improved with D4450-1/-043 Arm/Arm Assembly. The D4450-1/-043 replaces D3074-1/-3 and feature a more robust and ergonomic design. Customers/operators who wish to upgrade existing D119-696-011/-013 Cargo Mirror Installations at earlier change numbers may procure the DSI-9578-011/-013 Kit from Dart. The revised weight and balance and parts list on page 2 of this service instruction are to be used for D119-696-011/-013 Cargo Mirror Installations at CHG 006.

INSTALLATION

Replacement of D3074-1 arm on D119-696-011 Single Mirror Installation:

1. Remove and discard existing D3074-1 Arm and existing D2057 Plug.
2. Install D4450-1 Arm and replacement D2057 Plug in accordance with Figure 1 of this service instruction.
3. Install D2011-101 Mirror to D4450-1 Arm using D3014-1 Locknut as shown in Figure 1 of this service instruction.

Replacement of D3074-3 Arm on D119-696-013 Dual Mirror Installation:

1. Remove and discard the existing D3074-3 Arm and associated parts/hardware. Note that the D3074-3 Arm also includes 2 X D2052 Brackets, 2 X D2055 Clamps, a D2056 Bellcrank, 2 X D2054 Bushings, and attaching hardware.
2. Install D4450-043 Arm Assembly in accordance with Figure 1 of this service instruction.
3. Install 2 X D2011-101 Mirrors to D4450-043 Arm Assembly using D3014-1 Locknuts as shown in Figure 1 of this service instruction.

MAINTENANCE AND CONTINUED AIRWORTHINESS

Inspection requirements for D4450-1/-043 Arm are identical to D3074-1/-3 Arm they are replacing. Refer to ICA-D119-696.

WEIGHT AND BALANCE

Installation	Weight	LATERAL		LONGITUDINAL	
		Arm	Moment	Arm	Moment
D119-696-011	2.3 lb	7.0 in	16.1 in-lb	22.0 in	50.6 in-lb
Cargo Mirror Installation (CHG 006)	1.04 kg	0.18 m	0.19 m-kg	0.56 m	0.58 m-kg
D119-696-013	3.2 lb	1.0 in	3.2 in-lb	22.0 in	70.4 in-lb
Cargo Mirror Installation (CHG 006)	1.45 kg	0.03 m	0.04 m-kg	0.56 m	0.81 m-kg

A	NEW ISSUE	MB	11.10.04
REV.		DESCRIPTION	BY DATE
DESIGN		DART AEROSPACE USA, INC	
DRAWN		KENT, WA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		DSI 9578	SHEET 1 OF 3
APPROVED		TITLE	SCALE
DE APPR.		MIRROR ARM UPGRADE	NTS
DATE	11.10.04	COPYRIGHT © 2011 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

PARTS LIST

Qty -011	Qty -013	Qty -041	Qty -043	Part Number	Description
X				D119-696-011	SINGLE CARGO MIRROR INSTALLATION
	X			D119-696-013	DUAL CARGO MIRROR INSTALLATION
1		X		D119-696-041	SINGLE CARGO MIRROR ASSEMBLY
	1		X	D119-696-043	DUAL CARGO MIRROR ASSEMBLY
		1	2	D2011-101	MIRROR ASSEMBLY
1	1			D2053	BRACKET
		2	**2	D2054	BUSHING
		2	**2	D2055	CLAMP
		1	**1	D2056	BELL CRANK
		1		D2057	PLUG
1	1			D2067	CONNECTOR
1	1			D2071	CABLE ASSEMBLY
		*1	*2	D3014-1	LOCKNUT
		1	**1	D3072-1	BRACKET
		1	**1	D3072-2	BRACKET
1	1			D3083-1	PLACARD
		1		D4450-1	ARM (WAS D3074-1)
			1	D4450-043	ARM ASSEMBLY (WAS D3074-3)
4	4			AN526-1032R9	SCREW
4	4	6	**6	AN960JD10	WASHER
		*1	*2	AN960JD416L	WASHER
		3	**3	MS21042L3	NUT (or MS21042-3)
2	2			MS21919DG5	CLAMP
4	4			MS27039-1-09	SCREW
		3	**3	MS27039-1-18	SCREW
1	1			MS35489-9	GROMMET
2	2			AKS7-1032-130	INSERT (or ALS7-1032-130 or AKS4-1032-130 or ALS7-1032-130 or AELS-032-130)

* INCLUDED AS PART OF D2011-101 MIRROR ASSEMBLY

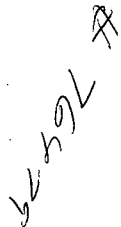
** INCLUDED WITH D4450-043 ARM

Qty -011	Qty -013	Part Number	Description
X		DSI-9578-011	MIRROR ARM UPGRADE KIT (SINGLE CARGO MIRROR INSTALLATION)
	X	DSI-9578-013	MIRROR ARM UPGRADE KIT (DUAL CARGO MIRROR INSTALLATION)
	**2	D2054	BUSHING
	**2	D2055	CLAMP
	**1	D2056	BELL CRANK
1		D2057	PLUG
	**1	D3072-1	BRACKET
	**1	D3072-2	BRACKET
1		D4450-1	ARM
	1	D4450-043	ARM ASSEMBLY
	**6	AN960JD10	WASHER
	**3	MS21042L3	NUT (or MS21042-3)
	**3	MS27039-1-18	SCREW

** INCLUDED WITH D4450-043 ARM

76479

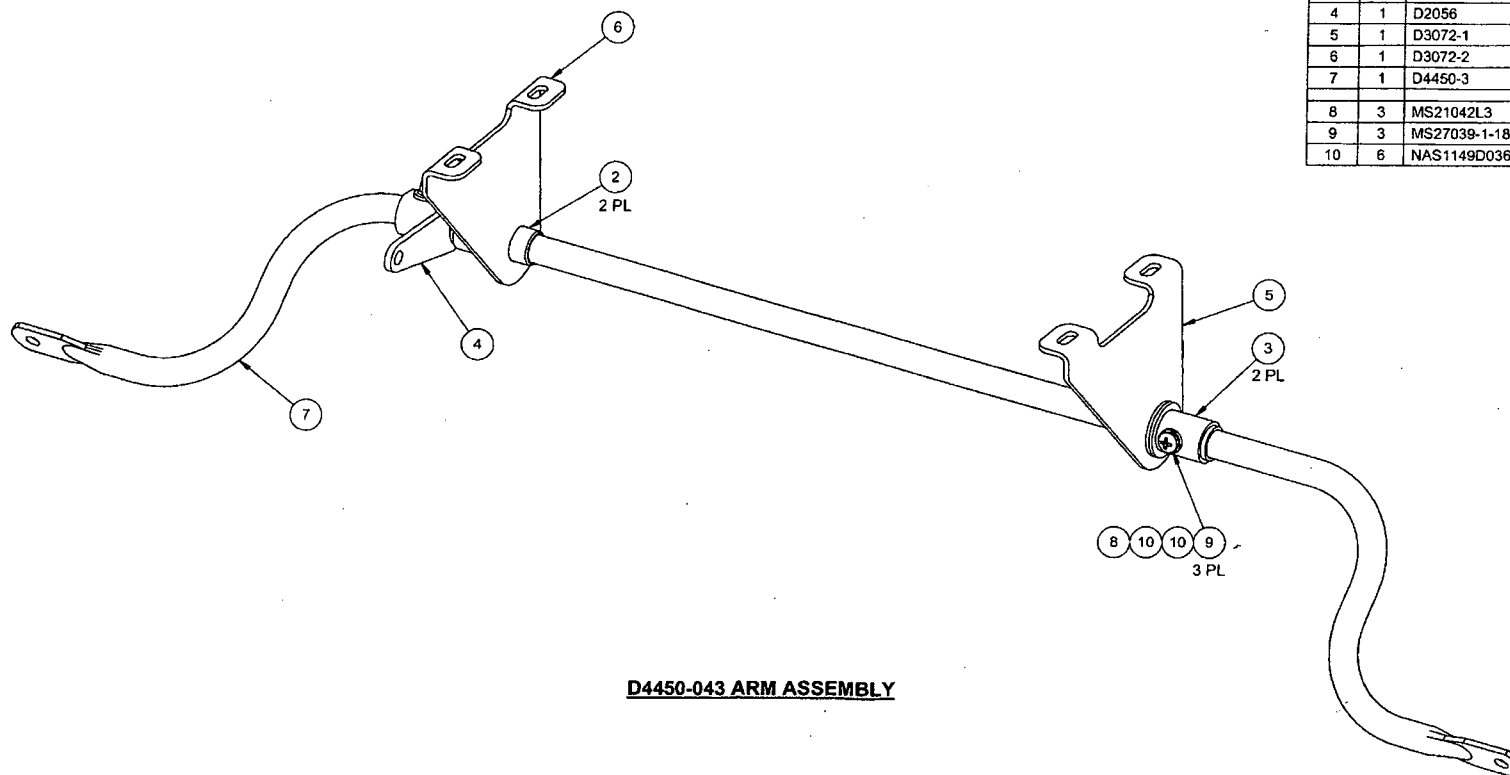
DESIGN		DART AEROSPACE USA, INC	
DRAWN		KENT, WA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		DSI 9578	SHEET 2 OF 3
APPROVED		TITLE	SCALE
DE APPR.		MIRROR ARM UPGRADE	NTS
DATE	11.10.04	COPYRIGHT © 2011 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	



D119-696-011/-013 SINGLE/DUAL MIRROR INSTALLATION

COPYRIGHT © 2011 BY DART AEROSPACE USA, INC
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.

ITEM	QTY -043	P/N	DESCRIPTION
1	X	D4450-043	ARM ASSEMBLY
2	2	D2054	BUSHING
3	2	D2055	CLAMP
4	1	D2056	BELLCRANK
5	1	D3072-1	BRACKET
6	1	D3072-2	BRACKET
7	1	D4450-3	ARM
8	3	MS21042L3	NUT
9	3	MS27039-1-18	SCREW
10	6	NAS1149D0363J	WASHER



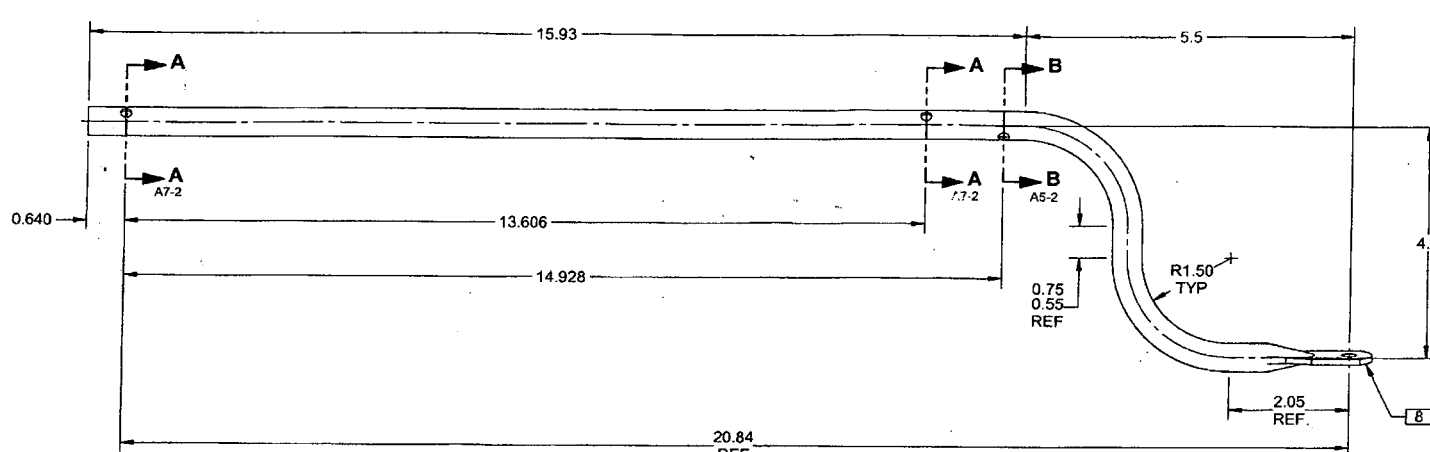
D4450-043 ARM ASSEMBLY

RELEASED
2011-11-18

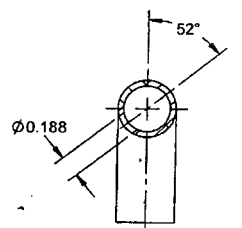
DESIGN		DART AEROSPACE USA, INC.	
DRAWN		KENT, WA	
CHECKED		DRAWING NO. D4450	REV. A
MFG. APPR.		SHEET 2 OF 4	
APPROVED		TITLE ARM	SCALE NTS
DE APPR.		DATE 11.09.29	

COPYRIGHT © 2011 BY DART AEROSPACE USA, INC.
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE CONDITION THAT IT IS
NOT TO BE USED FOR ANY PURPOSE, OR COPIED OR REPRODUCED TO ANY OTHER PERSON WITHOUT
WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.

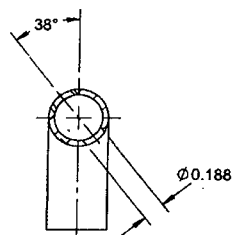
8 7 6 5 4 3 2 1



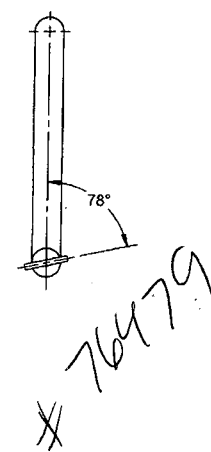
D4450-1 ARM



SECTION A-A
SCALE 2X C4-2 C8-2



SECTION B-B
SCALE 2X C4-2

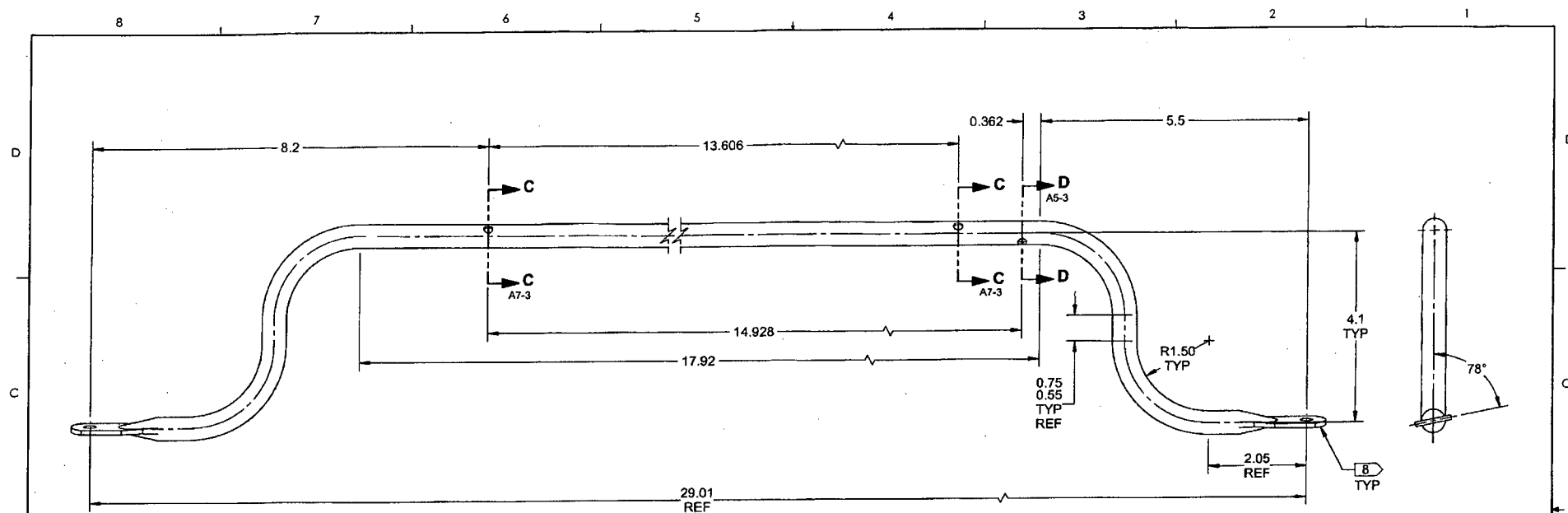


- D4450-1 NOTES:**
- 1) MATERIAL: AISI 304/316 STAINLESS STEEL SEAMLESS ROUND TUBING, $\phi 0.50 \times 0.049$ WALL PER ASTM A213 OR ASME SA213 OR ASTM A269 REF. DART SPEC. M304TR0.500W.049
 - 2) FINISH: POWDER COAT "BLACK SANDEXT" (4.3.5.7) PER DART QSI 005 4.3
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: NONE
 - 7) WEIGHT: 0.49 lbs
 - 8) PUNCH END PER SPEC. CONTROL DRAWING D2727

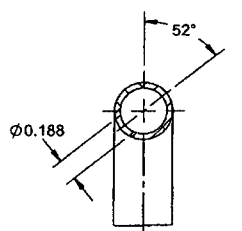
RELEASED
2011-11-18
JND

DESIGN		DART AEROSPACE USA, INC.	
DRAWN		KENT, WA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D4450	SHEET 3 OF 4
APPROVED		TITLE	SCALE
DE APPR.		ARM	NTS
DATE	11.09.29	COPYRIGHT © 2011 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

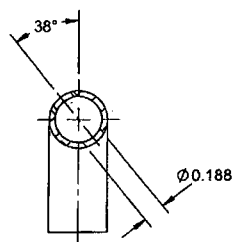
8 7 6 5 4 3 2 1



D4450-3 ARM



SECTION C-C
SCALE 2X
C4-3
C6-3



SECTION D-D
SCALE 2X
D3-3

D4450-3 NOTES:

- 1) MATERIAL: AISI 304/316 STAINLESS STEEL SEAMLESS ROUND TUBING, $\phi 0.50 \times 0.049$ WALL
PER ASTM A213 OR ASME SA213 OR ASTM A269
REF. DART SPEC. M304TR0.500W.049
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION NONE
- 7) WEIGHT: 0.72 lbs
- 8) PUNCH END PER SPEC. CONTROL DRAWING D2727
- 9) REFER TO SHEET 2, D4450-043 ARM ASSEMBLY, FOR INSTALLATION OF REQUIRED PARTS PRIOR TO PERFORMING ALL BENDS

DESIGN		DART AEROSPACE USA, INC.	
DRAWN		KENT, WA	
CHECKED		DRAWING NO.	REV.
MFG. APPR.		D4450	SHEET 4 OF 4
APPROVED		TITLE	SCALE
DE APPR.		ARM	NTS
DATE	11.09.29	COPYRIGHT © 2011 BY DART AEROSPACE USA, INC. <small>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

RELEASED
2011-11-10
MD

76479